KEEPING BRITAIN TRADING

IMMINGHAM EASTERN RO-RO TERMINAL

Outline Offshore Construction Environmental Management Plan (CEMP) with Appendices
Document Reference 9.2.2

APFP Regulations 2009 – Regulation 5(2)(q)
PINS Reference – TR030007
December 2023

Page intentionally left blank

Associated British Ports

Immingham Eastern Ro-Ro Terminal

Outline Offshore Construction Environmental Management Plan (CEMP) with Appendices

December 2023

Regulation Reference:	APFP Regulation 5(2)(q)
PINS Reference	TR030007
Application Document Reference	9.2.2
Author	Immingham Eastern Ro-Ro Terminal Project Team

Version	**Date**	**Status of Version**
Rev 01	December 2023	Post Deadline 7 Submission

Immingham Eastern Ro-Ro Terminal

Outline Offshore Construction Environmental Management Plan (CEMP)

December 2023

Delivering a better world

Quality information

Prepared by	Checked by	Approved by
AECOM	KF Senior Consultant	GC Associate Consultant

Prepared for:

Associated British Ports

Prepared by:

AECOM Limited
5th Floor, 2 City Walk
Leeds LS11 9AR
United Kingdom

T: +44 (0)113 391 6800
aecom.com

Table of Contents

1. Introduction 9
1.1 Overview 9
1.2 The applicant 9
1.3 The proposed development 9
1.4 The purpose of the Outline Offshore CEMP 11
1.5 Implementation 15
2. Construction phase arrangements 16
2.1 Indicative programme 16
2.2 Working hours 16
2.3 Site lighting 16
2.4 Recycling and disposing of waste 16
2.5 Best practice measures 17
2.6 Training and communications 17
2.7 Stakeholder communications 17
3. Impact avoidance and mitigation measures implementation plan 19
3.1 Overview 19
3.2 Checking and corrective action 43
3.3 Management review 44
4. References 45
Appendix A Outline Stakeholder Management Plan 47
Appendix B Outline Shipboard Oil Pollution Emergency Plan 48
Appendix C Outline Oil Spill Contingency Plan 50
Acronyms 51

Tables

Table 1.1 Detailed Offshore CEMP documents and relevant body to be consulted.. 13
Table 3.1: Physical processes 19
Table 3.2: Water and sediment quality 20
Table 3.3: Nature conservation and marine ecology 21
Table 3.4: Commercial and recreational navigation..... 28
Table 3.5: Air quality 34
Table 3.6: Noise and vibration 34
Table 3.7: Cultural heritage and marine archaeology 36
Table 3.8: Climate change..... 38
Table 3.9: Protected Species..... 39

Executive summary

1 This document has been prepared on behalf of Associated British Ports (the 'Applicant') and forms the Outline Offshore Construction Environmental Management Plan (CEMP) for the Immingham Eastern Ro-Ro Terminal (IERRT) project. By implementing the measures set out in the following sections, the Detailed Offshore CEMP will help to manage environmental issues appropriately during construction.

2 **Section 1** provides an overview of the offshore elements of the IERRT project, the Applicant and the implementation of the Offshore CEMP.

3 **Section 2** details the indicative construction programme, including construction facilities.

4 **Section 3** sets out the measures to be implemented during construction for specific topics relevant to the offshore elements of the IERRT project. The tables include a summary of the potential impacts and associated mitigation, monitoring measures identified for the applicable Environmental Impact Assessment (EIA) topic that specified construction-related mitigation measures (Physical Processes; Water and Sediment Quality; Nature Conservation and Marine Ecology; Commercial and Recreational Navigation; Coastal Protection, Flood Defence and Drainage; Air Quality; Noise and Vibration; Cultural Heritage and Marine Archaeology; Traffic and Transport; Land Use Planning; Climate Change; and Protected Species) reported in the Environmental Statement (ES) chapters and appendices (DCO Application Documents Reference number 8.2 and 8.4).

5 **Appendices A – C** set out the outline management plans to which the Principal Contractor will base their detailed management plans on as construction methods and approaches are refined during detailed design.

1. Introduction

1.1 Overview

1.1.1 This Outline Offshore CEMP (DCO Application Document Reference number 9.2.2) has been prepared by AECOM Ltd on behalf of Associated British Ports (ABP) (the 'Applicant'). It forms part of the application (the 'Application') for a Development Consent Order (a 'DCO'), that has been submitted to the Secretary of State (the 'SoS') for Transport, under section 37 of 'The Planning Act 2008' (the '2008 Act'). Once appointed, the Principal Contractor will develop their own Offshore CEMP in accordance with the principles within this Outline Offshore CEMP. The 'Principal Contractor's Offshore CEMP' would be updated regularly throughout construction, acting as a 'live' document to capture all construction and environmental issues.

1.1.2 The Applicant is seeking development consent for the construction, operation and maintenance of a new roll-on roll-off (Ro-Ro) facility (the 'IERRT project') within the existing Port of Immingham, Lincolnshire ('the site'). The Port of Immingham is one of the UK's busiest ports, operating 24 hours a day, 365 days a year.

1.1.3 The IERRT project comprises marine and landside infrastructure. The rest of this document solely discusses the marine (offshore) elements.

1.1.4 The IERRT project falls within the definition of a 'Nationally Significant Infrastructure Project' (NSIP) under Section 14(1)(j) of the 2008 Act, as it comprises an alteration of harbour facilities, and under Section 24(2) is wholly located within England; and under Section 24(3)(b) comprises Ro-Ro ships, 250,000 units. As such, a DCO application is required to authorise the IERRT project in accordance with Section 31 of the 2008 Act. The legislative details are discussed further in Chapter 5 (Volume 1 of the ES) (DCO Application Documents Reference number 8.2.5).

1.2 The applicant

1.2.1 The Applicant, ABP, is the owner and operator of the Port of Immingham (PoI).

1.3 The proposed development

1.3.1 As this Outline Offshore CEMP relates only to the offshore construction activities, the following is a summary of the offshore (Marine works) elements of the proposed development.

1.3.2 The IERRT project comprises a Ro-Ro facility within the Port of Immingham. The facility will be designed for the embarkation and disembarkation of principally commercial cargo carried either by accompanied trailer or by lorry or on unaccompanied trailers which will be collected at the port of disembarkation. Further details are provided below and fully described in Chapter 2: Proposed Development (Volume 1 of the ES) (DCO Application Document Reference number 8.2.2).

Marine works

1.3.3 The proposed marine works are summarised below. Further details can be found in ES Volume 1, Chapter 2: Proposed Development (DCO Application Document Reference number 8.2.2).

- An open piled approach jetty, a maximum of 250 m in length;
- A single linkspan bridge to link the approach jetty to the floating pontoons, a maximum of 90 m in length and 10 m wide;
- Two floating pontoons, a maximum of 40 m x 90 m x 9.35 m, linked by a linking bridge up to 20 m in length, and secured by four reinforced concrete restraint dolphins (maximum dimensions of 12 m x 8 m). Three dolphins will consist of four piles plus a guiding pile, and the fourth will consist of six piles plus a guiding pile;
- Two open piled finger piers with concrete decks, each up to 270 m in length;
- Possible impact protection measures if required, supported by enhanced operational marine controls; and
- A berthing area with side slopes.

Capital dredge

1.3.4 The new berth area will require a capital dredge. The maximum spatial extent of the dredge is estimated to be approximately 70,000 m^2. The berth area will be dredged with the appropriate side slopes to a depth of 9 m below Chart Datum (CD), including an allowance for over dredge.

1.3.5 It is estimated that a maximum of 190,000 m^3 of material will be removed, which is likely to constitute approximately 40,000 m^3 of boulder clay, and 150,000 m^3 of sand/silt (alluvium) *in situ*.

1.3.6 The final capital dredge methodology will be determined in collaboration with the dredging contractor. It is currently anticipated, however, that the majority or all material will be removed with a tug assisted backhoe dredger, the size of which will be determined by the specialist dredging contractor. Some material may also be removed by trailer suction hopper dredger (TSHD) depending on the sediment conditions and the availability of TSHD dredgers.

Disposal of dredge material

1.3.7 It is not considered that the dredge material (being predominantly silt and clay) is of a quality suitable for alternative beneficial use, such as for the purpose of construction/reclamation infill, by reason of its low potential bearing capacity either on land or within the marine environment. In addition, no infill material will be required for the project nor, as far as ABP are aware, for any other project in the locality.

1.3.8 In light of the above, it is considered that disposal within the estuary, at suitable licensed disposal site/s, is the best available option (subject to the view of the Marine Management Organisation (MMO) and the Centre for Environment, Fisheries and Aquaculture Science (Cefas)).

1.3.9 A sediment contamination survey was undertaken in October 2021 to characterise the dredge material and to support the application to dispose of the dredge material at an existing licensed disposal site. This was undertaken in accordance with the MMO sample plan (SAM/2021/00053) which confirmed the suite of contaminants, number of samples, sample locations, replicates and sampling depth required, taking account of available guidelines for the management of dredge material to be disposed at sea (OSPAR Commission, 2014).

1.3.10 Contaminant concentrations in sediment samples have been compared to Cefas Guideline Action Levels (ALs) to determine their suitability for disposal at sea. The majority of contaminants in the sediments of the proposed dredge area are at relatively low concentrations, mostly below, or marginally exceeding, Cefas AL1. There were no exceedances of AL2 in any sediment samples analysed and it is considered that the dredge material is suitable for disposal at sea.

1.3.11 The sediment contamination analysis results are presented in the MMO results template at Application Document Reference number 9.5. This will allow the MMO, in consultation with Cefas, to consider the suitability of the material for disposal at sea. Further, more detailed information, can also be found in the Water and Sediment Quality (Chapter 8) of the ES (application Document Reference number 8.2.8).

1.3.12 The disposal site HU056 (Holme Channel) will be used to dispose of unerodable clay material, and HU060 (Clay Huts) will be used to dispose of sand/silt (alluvium) material. This is based on the proximity, suitability and capacity of those disposal sites.

1.4 The purpose of the Outline Offshore CEMP

1.4.1 The purpose of this Outline Offshore CEMP is to:

- manage the environmental effects of the Offshore Scheme as identified in the ES;
- provide the equivalent of a Code of Construction Practice (CoCP); and
- provide the ‘blueprint’ for the detailed Offshore CEMP that will follow, enabling the Examining Authority and the Secretary of State to identify those mitigation measures proposed within the Scheme which are secured within this Offshore CEMP.

1.4.2 Producing a detailed Offshore CEMP is considered a multi-staged process, developing in step with the Proposed Development’s design evolution from the consenting to build-out phases. As the Proposed Development’s final and technical details are refined, the Offshore CEMP will similarly be refined to include more detailed information; thus, developing from an outline to a final (detailed) document.

1.4.3 As such, this document constitutes the “Outline Offshore CEMP” for the Project, which will be fully refined into the “Detailed Offshore CEMP” for implementation during construction.

1.4.4 This Outline Offshore CEMP is a document which sets out the management measures that the Applicant and the Principal Contractor will adhere to during construction. It is structured by technical environmental discipline,

following the topics of the Environmental Statement (ES). It contains a series of outline environmental management plans and related documents for the Offshore Scheme, which are, subject to the DCO being granted, to be produced by the Principal Contractor ("PC") during the detailed design stage of the Project. This Outline Offshore CEMP is based on the preliminary design of the Scheme, as submitted by the Applicant within the DCO application, and contains the measures and steps required for the production of the Detailed Offshore CEMP.

1.4.5 Following the PC led process described above, the "Detailed Offshore CEMP" will be produced. This document will contain a series of detailed environmental management measures and topic-specific management plans and related documents for the Offshore Scheme, which is produced in advance of Offshore Scheme construction by the PC and refined during the construction stage as necessary. All of the detailed environmental management plans and related documents prepared must be in full accordance with this Outline Offshore CEMP, including the approval requirements set out below.

Development of the Outline Offshore CEMP

1.4.6 This Outline Offshore CEMP has been prepared iteratively and in parallel with the development of the project design, proposed construction methodologies and the EIA. Measures within the Outline Offshore CEMP include construction mitigation which, in part, arise from the technical assessments reported in the ES. These assessments have taken account of the effectiveness of mitigation measures embedded into the design of the Offshore Scheme prior to identifying the likely environmental effects of the Offshore Scheme.

1.4.7 Construction of the Offshore Scheme will be subject to measures and procedures defined within the Detailed Offshore CEMP. The Detailed Offshore CEMP will be based on, and will fully incorporate, the requirements of this Outline Offshore CEMP that are relevant to that construction element and the PC's contractual scope. It will also include the implementation of appropriate industry standard practices and control measures for environmental impacts arising during the works.

1.4.8 Subject to the potential for alternative measures being identified, the measures defined in the Detailed Offshore CEMP will be applied by the PC (as stipulated in the relevant parts of the Outline Offshore CEMP) throughout the duration of their contract to provide planning, management and control during the construction phases of the Offshore Scheme with the aim of controlling potential impacts upon the natural environment, people and businesses.

1.4.9 All contractors will be required to comply with applicable environmental legislation, together with any additional environmental controls imposed within the DCO. The induction, training and briefing procedures for staff are outlined in Section 1.5. The measures implemented are set out in relation to each environmental discipline of the ES with Table 3.1 to Table 3.9 within Section 3 of this document. These form the basis of the management plans to be produced.

1.4.10 As noted, this Outline Offshore CEMP contains a number of management measures, which have been developed to the highest possible level of detail prior to a PC being appointed. As described above, these are to be developed into a final Detailed Offshore CEMP by the PC (and where applicable other organisations, such as subcontractors) prior to construction commencing.

1.4.11 Table 1.1 outlines specific management plans that the Applicant will produce within the Detailed Offshore CEMP. These will be updated by the PC and incorporated into the Detailed Offshore CEMP, in consultation with the relevant bodies listed for each discipline.

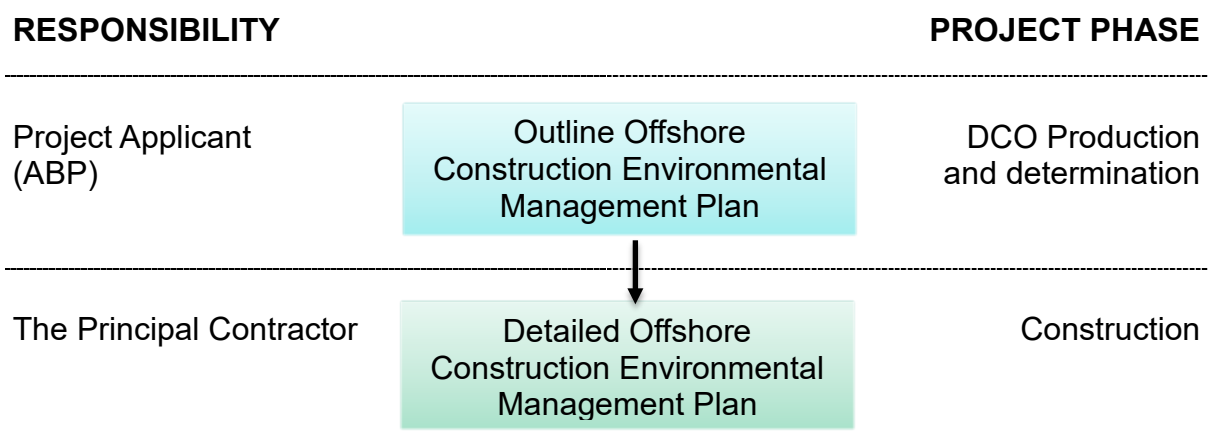
Table 1.1 Detailed Offshore CEMP documents and relevant body to be consulted

Document to be developed in Detail by PC	Consultees
Marine Mammal Management Plan	MMO/JNCC
Shipboard Oil Pollution Emergency Plan	MMO
Oil Spill Contingency Plan	MMO
Stakeholder Management Plan	MMO

1.4.12 Following any necessary amendments arising from the consultation process, overall approval of the Detailed Offshore CEMP will fall to the Marine Management Organisation ("MMO"), as per Requirement 8 of the DCO and Condition 11 of Part 2 of the Deemed Marine Licence.

1.4.13 The Detailed Offshore CEMP (and any other document that forms part of it) will be a live document maintained by the PC throughout the construction phase of the Scheme. As a minimum, the Detailed Offshore CEMP will be reviewed by the PC every six months to ensure that its content remains up to date and relevant. Figure 1.1 presents how the Offshore CEMP develops and advances through each phase of the Project and the parties responsible.

Figure 1.1 Development of the Offshore Construction Environmental Management Plan



1.4.14 Should any amendments to documents which have been consulted upon and subsequently approved be necessary, a further consultation and approval process, as set out in paragraphs 1.4.11 to 1.4.13 and Table 1.1 above, shall be undertaken.

1.4.15 The Applicant will assist the PC in the preparation of the Detailed Offshore CEMP and other detailed documents and management plans defined as being required within the Outline Offshore CEMP and implementation of other matters stated within the Outline Offshore CEMP, such as training or working relations with the Port and Harbour Master of Immingham.

1.4.16 It is expected that the Principal Contractor will comply, as a minimum, with applicable environmental legislation and environmental mitigation measures at the time of construction, together with any additional environmental controls imposed by the DCO.

1.4.17 Any additional construction licences, permits or approvals that are required as listed within this Outline Offshore CEMP, including any environmental information submitted in respect of them, will also be adhered to.

The Structure of the Offshore CEMP

1.4.18 The structure of this Outline Offshore CEMP is as follows:

- Section 1 provides an introduction to the IERRT project and the purpose, use and implementation of the Offshore CEMP;
- Section 2 provides information on the offshore construction arrangements;
- Section 3 presents additional topic specific information, which includes –
  - Environmental impacts (assessed through the EIA),
  - Impact avoidance or reduction of measures to be applied, where the ES has assumed they would be applied during the detailed design or construction phase,

  - Any other additional mitigation measures,
  - Additional surveys or monitoring considered necessary pre-construction or during construction in order to confirm the status of receptors, and the effectiveness of impact avoidance/mitigation measures,
  - Corrective action procedure to be applied, where necessary, and
  - Links to other complementary plans and procedures;
- Appendix A: Outline Stakeholder Management Plan;
- Appendix B: Outline Shipboard Oil Pollution Emergency Plan (SOPEP); and
- Appendix C: Outline Oil Spill Contingency Plan.

1.4.19 In summary, this Outline Offshore CEMP identifies how commitments made during the EIA (and reported in the ES) will be translated into actions on-site.

1.4.20 The Principal Contractor will be responsible for working in accordance with the environmental controls documented in this Outline Offshore CEMP, which will allocate responsibilities for environmental performance. The overall responsibility for implementation of the Outline Offshore CEMP will lie with the Applicant.

1.5 Implementation

1.5.1 This Outline Offshore CEMP sets out all roles, responsibilities and actions required in respect of implementation of the measures, including:

- Training requirements and roles and responsibilities for relevant personnel on environmental topics;
- Information on site briefings and toolbox talks that will be used to equip relevant staff with the necessary level of knowledge to follow environmental control procedures;
- Measures to advise employees of changing circumstances as works progress;
- Communication methods (e.g., updates via the Applicant's website);
- Document control; and
- Environmental emergency procedures.

1.5.2 All construction works associated with the IERRT project must be carried out in accordance with the approved Offshore CEMP unless otherwise agreed with the relevant authorities.

2. Construction phase arrangements

2.1 Indicative programme

2.1.1 Subject to all necessary consents and licences being granted, construction work is expected to start in 2024, however, there are currently two alternate construction programme scenarios:

- Construction of all elements at the same time: this scenario comprises the construction of all three berths at once, followed by their operation and will be largely completed by mid-2026; and
- Sequenced construction: this scenario comprises the construction of the northern pier and the Northern, Central and Southern Storage Area first, with the first two berths becoming operational around mid-2025, followed immediately by the construction and operation of the southern pier and the construction of the Western Storage Area. This scenario would be complete in 2028.

2.2 Working hours

2.2.1 Marine works may be undertaken 24 hours a day, Monday to Sunday (subject to other environmental restrictions in certain months which prevent this – see the Nature Conservation and Marine Ecology chapter (Chapter 9) of the ES Volume 1 (Application Document Reference number 8.2.9).

2.3 Site lighting

2.3.1 Additional temporary construction site lighting will be installed to enable safe working on the construction site in the hours of darkness. However, the site is already lit at night due to the ongoing operational usage. Therefore, any additional lighting associated with the construction of the IERRT project is unlikely to alter the lighting regime within the site, given its location within a port environment that is lit at night and operates 24 hours a day.

2.4 Recycling and disposing of waste

2.4.1 As detailed in Section 1.3, the Project works will require a capital dredge for the new berth area. Therefore, dredge disposal will also be required.

2.4.2 It is not considered that the dredge material (being predominantly silt and clay) is of a quality suitable for alternative beneficial use. Thus, it is considered that disposal within the estuary is the best available.

2.4.3 Based on the proximity, suitability and capacity of those disposal sites, the disposal site HU056 (Holme Channel) will be used to dispose of unerodable clay material, and HU060 (Clay Huts) will be used to dispose of sand/silt (alluvium) material.

2.5 Best practice measures

2.5.1 The selected Principal Contractor will be encouraged to be a member of the 'Considerate Constructors Scheme' which is an initiative open to all contractors undertaking building work.

2.5.2 Construction industry guidance (e.g. from the Construction Industry Research and Information Association (CIRIA)) will be adopted as far as reasonably practicable to assist in reducing the potential for pollution and nuisance. This will be achieved by employing best practice measures.

2.6 Training and communications

2.6.1 All staff working on the construction of the IERRT project will be inducted on the project requirements. This Outline Offshore CEMP and the associated risks and opportunities will be distributed to the Principal Contractor, key members of the design team and contracting teams to ensure that the environmental requirements are communicated.

2.6.2 Any change in design, programme or other changes to the IERRT project as the works progress must be communicated as appropriate to all staff working on the IERRT project. It is advised that this is done via a top-down approach, whereby managers disseminate information to their team.

2.6.3 Site briefings and training will be supplemented as necessary and appropriate through toolbox talks during delivery the IERRT project and will include key environmental risks. Toolbox talks are to be delivered by the contractor's worksite lead or environmental specialist (if required) to all members of site staff at the start of each shift.

2.7 Stakeholder communications

2.7.1 Stakeholder communications will be managed via the Stakeholder Management Plan (Appendix A) that will be put in place prior to the works commencing. This will include relevant project information and contact details for stakeholders to communicate queries to the project team and make complaints. The Stakeholder Management Plan will be developed by the Principal Contractor in conjunction with ABP and approved by the MMO to ensure transparency of reporting and appropriate lines of communication into and out of the Project are established.

2.7.2 Based on ABP's existing knowledge and developed relationships with the surrounding stakeholders and communities, the Stakeholder Management Plan will cover the following topics:

- Roles and responsibilities;
- Communication plan during construction (e.g. frequency, means of recording communications and tracking progress, and escalation process);
- Communication methods (i.e. project website, email address, phone number, committee meetings and community liaison); and
- Complaints strategy and process.

2.7.3 A piling specific community liaison protocol will be developed by the contractor, with input from ABP and included within the Stakeholder Management Plan, so that businesses/occupiers are kept informed of the piling activities, their duration, and their expected impact.

2.7.4 Measures relating to stakeholder communications regarding noise are detailed in Table 3.6, in Section 3 of this CEMP.

3. Impact avoidance and mitigation measures implementation plan

3.1 Overview

3.1.1 This section sets out the embedded impact avoidance and additional mitigation, enhancement and management measures to be implemented during offshore construction, as specified within the ES. It identifies where additional surveys will be required, either pre-construction or during construction.

3.1.2 This section also identifies the responsible party for each mitigation, enhancement measure or monitoring requirements. The majority of these will, however, be assigned to the appointed Principal Contractor.

3.1.3 The topics covered in this Offshore CEMP include:

- Physical Processes (Table 3.1);
- Water and Sediment Quality (Table 3.2);
- Nature Conservation and Marine Ecology (Table 3.3);
- Commercial and Recreational Navigation (Table 3.4);
- Air Quality (Table 3.5);
- Noise and Vibration (Table 3.6);
- Cultural Heritage and Marine Archaeology (Table 3.7);
- Climate Change (Table 3.8); and
- Protected Species (Table 3.9).

3.1.4 Sections 433.2 and 3.3 below, describe how the monitoring strategy will be implemented in order to assess the effectiveness of mitigation measures, monitor the impact of construction works and take other actions necessary to enable compliance.

Table 3.1: Physical processes

Potential Impact	Mitigation/Enhancement Measure	Responsibility
Changes in water depth and environmental conditions due to increased deposition.	Targeted disposal deposition – disposal loads will be targeted in the central/deeper areas of the disposal sites (HU056 and HU060). This will minimise the initial reduction in water depth and any consequential environmental changes at these disposal sites.	Contractor

Table 3.2: Water and sediment quality

Potential Impact	Mitigation/Enhancement Measure	Responsibility
Impaired water and sediment quality due to accidents and spillages/leaks	In terms of water and sediment quality, the potential risk from accidents and spillages/leaks during construction will be avoided or minimised by ensuring that the offshore construction methods, proposed design, and the contractual arrangements follow environmental management best practice (ES Volume 1 Chapter 3, Section 3.3, DCO Application Document Reference number 8.2.3). In particular, the following guidance will be adopted: • Pollution prevention for businesses' Guidance in England (Defra and Environment Agency, 2019); • 'Pollution prevention for businesses' Guidance in England (Defra and Environment Agency, 2019); • Pollution Prevention Guidance (PPG), or Guidance for Pollution Prevention (GPP) in the UK (NetRegs, 2020): - Understanding Your Environmental Responsibilities – Good Environmental Practices (PPG1); - Works and maintenance in or near water (GPP5); - Working at construction and demolition sites (PPG6); and - Safe storage and disposal of used oils (GPP8). • The Oil Care Code; • CIRIA's Environmental Good Practice on Site (CIRIA, 2015); • Regulations relating to the International Convention for the Prevention of Pollution from Ships (MARPOL) and therefore all vessels will be equipped with waste disposal facilities onboard (IMO, 2021); • Control measures and shipboard oil pollution emergency plans (Appendix B) will be in place and adhered to under MARPOL Annex I requirements for all vessels; and Management of the mobilisation of any contaminants associated with dredging and dredge disposal. Best practice measures will include:	Contractor

Potential Impact	Mitigation/Enhancement Measure	Responsibility
	• Removal of waste from site in a timely manner. • Materials and containers which could possibly spill or contaminate the surrounding environment will be removed from site in a timely manner and taken to be processed at a licensed facility. • Storage of liquid oils/ chemicals in suitable containers/ bunded storage areas. • In the event of a pollution incident measures to report, manage, and minimise any impacts will be pursued, with construction spill response procedures to contain any accidental spills. • The existing oil spill contingency plan (Appendix C) for Immingham Port will be followed in the event of a spillage, to minimise impacts of a spill entering the port waters. • Regular maintenance of plant. • Spill kits present and available for use in the event of a spill onsite. • Designated refuelling areas. • Fuel will be stored in the site compound overnight, limiting the potential for fuel theft and vandalism which could cause pollution. • Any pollution incidents will be reported immediately to the relevant authorities, namely the Environment Agency (EA), the MMO and the Statutory Harbour Authority. • The workforce will be trained in preventing and dealing with pollution incidents.	

Table 3.3: Nature conservation and marine ecology

Potential Impact	Mitigation/Enhancement Measure	Responsibility
Underwater noise and vibration impacts on fish and marine mammals	To reduce the level of impact associated with underwater noise and vibration on fish and marine mammals during construction (in particular piling), the following mitigation measures will be implemented: • **Soft start:** The gradual increase of piling power, incrementally, until full operational power is achieved will be used as part of the piling methodology. This will give fish and marine	Contractor

Potential Impact	Mitigation/Enhancement Measure	Responsibility
	mammals the opportunity to move away from the area before the onset of full impact strikes. The duration of a soft start will be 20 minutes, in line with the JNCC piling protocol (JNCC, 2010). • **Vibro piling:** Vibro piling will be utilised where possible (which produces lower peak source noise levels than percussive piling). • **Seasonal piling restrictions**: During percussive piling the following further restrictions will be adopted: - No percussive piling is to take place within the waterbody between 1 April and 31 May inclusive in any calendar year. This will minimise the potential impact on the greatest number of different migratory fish in the Humber Estuary, in accordance with the periods identified in Table 9.16 within Chapter 9 of the ES, Application Document Reference number 8.2.9, and also the more vulnerable earlier life stages of a number of migratory fish species. This restriction does not apply to percussive piling that can be undertaken outside the waterbody at periods of low water; - The duration of percussive piling is to be restricted within the waterbody from 1 June to 30 June and 1 August to 31 October inclusive in any year to minimise the impacts on fish migrating through Humber Estuary during this period. The maximum amount of percussive piling permitted within any 4-week period must not exceed 140 hours where a single piling rig is in operation or a total of 196 hours where two or more rigs are in operation. The measurement of time during each work-block described above must begin at the start of each timeframe, roll throughout it, then cease at the end, where measurement will begin again at the start of the next timeframe, such process to be repeated until the end of piling works. This restriction does not apply to percussive piling that can be undertaken outside the waterbody at periods of low water. This approach has been developed in consultation with the MMO and Cefas. • **Night time piling restrictions**: The upstream migration of river lamprey takes place almost exclusively at night (Environment Agency, 2013).	

Potential Impact	Mitigation/Enhancement Measure	Responsibility
	There is also an increase in glass eel migratory activity during the night time (Harrison et al., 2014). No percussive piling will take place within the waterbody between 1 March to 31 March, 1 June to 30 June and 1 August to 31 October inclusive after sunset and before sunrise on any day. Percussive piling operations that have already been initiated will, however, be completed where an immediate cessation of the activity would form an unsafe working practice. This restriction does not apply to percussive piling that can be undertaken outside the waterbody at periods of low water which will limit the potential effects of underwater piling noise on the nocturnal movements of river lamprey and glass eels. • **Marine Mammal Observer:** In addition, in order to further reduce the significance of the impact to marine mammals the JNCC "Statutory nature conservation agency protocol for minimising the risk of injury to marine mammals during piling" (JNCC, 2010) will be followed during percussive piling. The key procedures highlighted in this document to be adopted include the following: - Establishment of a 'mitigation zone' of 500 m from the piling locations, prior to any percussive piling. Within this mitigation zone, observations of marine mammals will be undertaken by a trained member of the construction team (referred to as the Marine Mammal Observer) using marine mammal identification resources; - 30 minutes prior to the commencement of percussive piling, a search should be undertaken by the Marine Mammal Observer to determine that no marine mammals are within the mitigation zone. Percussive piling activity should not be commenced if marine mammals are detected within the mitigation zone or until 20 minutes after the last visual detection; - During percussive piling, the Marine Mammal Observer should observe the mitigation zone to determine that no marine mammals are within this area. Construction workers will be alerted if marine mammals are identified, and piling will cease whilst any marine mammals	

Potential Impact	Mitigation/Enhancement Measure	Responsibility
	are within the mitigation zone. Piling can recommence when the marine mammal exits the mitigation zone and there is no further detection after 20 minutes; and - If there is a pause in percussive piling operations for any reason over an agreed period of time, then another search (and soft-start procedures for piling) should be repeated before activity recommences. If, however, the mitigation zone has been observed while piling has ceased and no marine mammals have entered the zone, piling activity can recommence immediately.	
Disturbance to coastal waterbirds	To reduce the level of impact associated with noise and visual disturbance during construction, the following mitigation measures will be implemented: • **Winter marine construction restriction from 1 October to 31 March** (**approach jetty and the inner finger pier):** In order to minimise potential disturbance effects on wintering populations of coastal waterbirds on the foreshore, marine construction activity associated with the approach jetty, linkspan, innermost pontoon and the inner finger pier (see Figure 1.2 to this ES, Application Document Reference number 8.3.1(b)) which are all located on or close (within approximately 200 m) to the intertidal mudflat will be prohibited during the winter months of October to March. This restriction applies until an acoustic barrier/visual screen has been installed on both sides of the semi-completed structure. Construction activity will then be undertaken on the approach jetty itself, behind the screens, with no use of large heavy plant. With the addition of acoustic barriers, noise levels on the intertidal mudflat will be less than 65 dB(A). Construction activity associated with the seaward section of the approach jetty, linkspan, innermost pontoon and inner finger pier can also occur two hours before and two hours after high water, when works are approximately 200 m from the exposed mudflat. A noise suppression system will also be used for piling. The noise suppression system is predicted to reduce noise levels to <70 dB Lmax at distances greater than approximately 200 m from the piling;	Contractor

Potential Impact	Mitigation/Enhancement Measure	Responsibility
	• **Noise suppression system for piling on the outer finger pier**: A noise suppression system (consisting of a piling sleeve with noise insulating properties) will be used during all percussive piling activities for the outer finger pier to reduce noise levels on nearby foreshore areas – - **Acoustic barrier/screening on marine construction barges:** To limit disturbance during construction, an acoustic barrier/screening will be placed on the side of the floating barges closest to the foreshore; construction activity should only be undertaken from the side of the barge facing away from the foreshore. This will be applied to floating barges used for all construction works including the outer finger pier during the over wintering period; - **Soft starts:** Using soft starts will allow birds to become more tolerant to piling noise by allowing a more gradual increase in noise levels which will reduce the potential for birds to become startled. This will be applied to all piling activity including the outer finger pier; and - **Cold weather construction restriction:** Coastal waterbirds are considered particularly vulnerable to bird disturbance during periods of extreme winter weather. On this basis, a temporary cessation of all construction activity will be implemented following seven consecutive days of freezing (zero or sub-zero temperature) weather conditions. The restriction will not be lifted until after 24 hours of above freezing temperatures and also that Metrological Office weather forecasts indicate that freezing conditions will not return for the next five days. Similar measures have been implemented for other nearby developments and also as part of the JNCC scheme to reduce disturbance to waterfowl due to shooting activity during severe winter weather.	
Changes in water depth and environmental conditions due	**Even disposal deposition of dredged material**: Targeting disposal loads in the central/ deeper area of the disposal sites to reduce depth reductions. This will minimise the initial reduction in water depth and any environmental changes at the	Contractor

Potential Impact	Mitigation/Enhancement Measure	Responsibility
to increased deposition.	disposal sites and see physical processes mitigation described at Table 3.1.	
Preventing a breach in biosecurity	ABP's existing biosecurity management procedures will be followed during construction. The following guidelines will be adhered to: • All vessels shall adhere to the International Convention for the Control and Management of Ships' Ballast Water and Sediments with the aim of preventing the spread of marine INNS (IMO, 2021); and • All vessels shall adhere to the International Maritime Organisation (IMO) Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (Biofouling Guidelines) (IMO, 2011). Best practice guidance has been developed on how to manage marine biosecurity risks and invasive non-native species (INNS) at sites and when undertaking activities through the preparation and implementation of biosecurity plans (Cook et al., 2014). This has been used to develop measures that will be followed during the dredging process: • **'Check, Clean and Dry' method:** Following the 'Check, Clean and Dry' method, prior to use, marine construction equipment will be checked for mud, aquatic animals or plant material and anything found will be removed. Equipment will be cleaned thoroughly, and allowed to fully dry to kill off any organisms that may have attached. This process will also be undertaken once relevant marine construction activities are completed and before equipment is removed from the site. • **Hull Cleaning:** The hulls of any vessels used during construction will be maintained to minimise the number of fouling organisms present. Hull cleaning may take place on land or in-water, but will not take place in the POI. In both cases, care will be taken to prevent the organisms and coating particles from being released into the water. • **Protective Coatings:** The use of protective coatings on any vessels used during construction will be employed to reduce the fouling of the vessel's hull and other below-water	Contractor

Potential Impact	Mitigation/Enhancement Measure	Responsibility
	surfaces. These coatings usually contain a toxic chemical (such as copper) or an irritant (such as pepper) that discourages organisms from attaching. Other coatings, such as those that are silicone-based, provide a surface that is more difficult to adhere to firmly, making cleaning of the hull less laborious. The type and concentration of coatings that can be applied to a boat hull is regulated and can vary between countries.	
Impact on marine ecology and designated sites due to accidents and spillages/leaks	Construction methods, proposed design and the contractual arrangements follow pollution prevention legislation and environmental management best practice as detailed in Chapter 3, Section 3.3 of the ES Volume 1 (Application Document Reference number 8.2.3). And see water and sediment quality mitigation at Table 3.2, above.	Contractor

3.1.5 There are a number of embedded risk controls that are in place at the Port, and these are to be adhered to during construction to ensure the safety of Port users, construction staff, and the environment. These are detailed in Chapter 10, Table 10.9 of the ES Volume 1 (Application Document Reference number 8.2.10). In addition to these, there are additional controls to be applied throughout the construction of the works are listed in Table 3.4.

3.1.6 The Protective Provisions for the Statutory Conservation and Navigation Authority (SCNA), at paragraph 3, include a Tidal Works Approval, which the Contractor will apply for once the detailed plans are available for the works. The SCNA and the Port of Immingham Dock Master will, in practice, review and consider the detailed plans (including method statements and programmes) working collaboratively as the responsibility for navigational safety requires close coordination between both statutory authorities.

3.1.7 The specific controls and procedures will be determined by the SCNA and the Port of Immingham Dock Master at the time when the detailed information has been reviewed, and the outline offshore CEMP will be updated to incorporate those specific requirements.

3.1.8 For the purposes of the outline offshore CEMP, Table 3.4 provides further clarification on the responsibilities for the works:

- Prior to Commencement
- During Construction;
- Upon Completion of Construction; and
- During Phased Construction alongside the Operation of IERRT.

3.1.9 Mitigation measures that are applicable prior to construction, during construction and upon completion of construction will be followed for all construction activities irrespective of whether the construction is completed in one phase.

3.1.10 In the event that construction is phased and occurs alongside the commencement of operations at IERRT, additional measures will be implemented as described in Table 3.4.

Table 3.4: Commercial and recreational navigation

Potential Impact	Mitigation/ Enhancement Measure	Responsibility
	Prior to Commencement	
Risks associated with commercial and recreational navigation as a result of construction	**Tidal Works Approval** Tidal Works Approval is required to be issued by the Harbour Master Humber as required by the Protective Provisions in Schedule 1, Part 1, paragraph 3 of the DCO. Prior to the commencement of the works, the Contractor will submit the detailed plans (including sections, drawings, specifications, calculations and method statements) to the Statutory Conservation and Navigation Authority (SCNA) for the approval required under paragraph 3. Plans are required to be submitted at least 28 days prior to the planned commencement of the first marine activity. The SCNA will review the plans to ensure that the works constitute safe working practice and will issue approval or refusal in line with paragraph 3 of the protective provisions. The Contractor and the SCNA will discuss the procedures and controls required for the marine activities associated with the marine works, which will include the following requirements. - Notification and liaison with VTS and the Dock Master for Immingham - Pilotage / PEC - Vessel exclusion zones - Notices to Mariners - Towage The SCNA may introduce further requirements and the detailed marine CEMP will be updated to incorporate those as required.	Contractor SCNA
	During Construction	

Vessel Exclusion Zone	
Following the Tidal Works Approval, a vessel exclusion zone is to be put in place whilst construction is taking place.	SCNA and Port of Immingham SHA
The SCNA and Port of Immingham SHA will promulgate the information of the exclusion zone to other marine users.	SCNA and Port of Immingham SHA
The Contractor will adhere to the Vessel Exclusion Zone throughout the works and will follow any further requirements that may be introduced by the Tidal Works Approval. The Detailed Marine CEMP will be updated to incorporate such measures as required by the Tidal Works Approval.	Contractor
Notices to Mariners	
Notices to mariner will be published detailing impacts and directions for each stage of the marine works.	SCNA and Port of Immingham SHA
Pilotage / PEC	
As part of the Tidal Works Approval, the Contractor will provide details of vessels to be used during the works and the requirements for pilotage or PECs will be agreed with the CHA.	Contractor and CHA
The CHA will manage any PEC applications in accordance with the routine practice for PEC applications on the Humber.	CHA
The CHA will identify and manage any additional training or familiarisation with existing Pilots or PECs during the works if it requires. The Contractor is to comply with the requirements of the CHA and PECs if authorised.	CHA Contractor
Liaison	
As part of the Tidal Works Approval, the Contractor, the SCNA and the Port of Immingham SHA will agree the necessary protocols for liaison during the marine works. All communication channels, procedural requirements for communication and contact details for individual parties will be incorporated into the appropriate documents including:	Contractor, SCNA and Port of Immingham SHA

- Risk Assessments - Method Statements The detailed Marine CEMP will be updated to incorporate such measures as required by the Tidal Works Approval. The Contractor will be responsible for complying with the liaison requirements set by the SCNA and the Port of Immingham SHA.	Contractor
Supporting / Safety Vessels As part of the Tidal Works Approval, the Contractor will provide details of the construction vessels and method statements to be used during the works. The requirements for supporting / safety vessels will be agreed with the SCNA and Port of Immingham SHA. The Contactor will be responsible for making available throughout the works the necessary safety and support craft, as agreed in the Tidal Works Approval. This may include: - Designated safety craft which is specifically designated for safety of personnel and in particular to respond to a 'Man Over-Board' recovery situation. - Guard or supporting vessels if flat-top barges are proposed as part of the construction craft. All procedural requirements for the use of such supporting / safety vessels as required by the Tidal Works Approval will be incorporated into the appropriate documents including: - Risk Assessments - Method Statements The detailed Marine CEMP will be updated to incorporate such measures as required by the Tidal Works Approval.	Contractor, SCNA and Port of Immingham SHA Contractor Contractor Contractor
Dropped object incident reporting: As part of the Tidal Works Approval, the Contractor and the SCNA and Port of Immingham SHA will agree a procedure for actions to be taken if an item is dropped during the construction phase that has the potential to cause a risk to navigation. This will align with the dropped objects procedure outlined in the Deemed Marine Licence and may include surveys, if required by the MMO or SCNA or the	Contractor, SCNA and Port of Immingham SHA

Port of Immingham SHA. The Contractor will be responsible for removing any specific obstructions from the seabed in accordance with any requirements. The detailed Marine CEMP will be updated to incorporate this procedure as required by the Tidal Works Approval. The Contractor will be responsible for any dropped object notifications and the implementation of the agreed procedure throughout the duration of the Construction Works.	Contractor
Loading / Unloading Plan for Barge Deliveries: As part of the Tidal Works Approval, the plans and method statements provided by the Contractor will include details of any equipment and materials being delivered by barge. The SCNA and Port of Immingham SHA will consider the appropriate requirements which may include: - Non-routine towage assessment - Detailed review of order and method of loading and unloading at the marine works site. The Contractor will be responsible for complying with the specific requirements of the SCNA and the SHA for any barge deliveries.	Contractor, SCNA and Port of Immingham SHA SCNA and Port of Immingham SHA (if required) Contractor
Tanker Berthing Protocols: As part of the Tidal Works Approval, the SCNA and Port of Immingham SHA will discuss and agree the appropriate measures to ensure that appropriate procedures and protocols are in place for construction personnel during tanker berthing operations. This may include: - Priority berthing for tanker vessels berthing at the IOT - Specific communication channels and liaison requirements (e.g. with VTS) - Vessel exclusion zones - Training and awareness All requirements will be incorporated into the appropriate documents including: - Risk Assessments - Method Statements	Contractor, SCNA and Port of Immingham SHA Contractor

The Contractor will be responsible for complying with the requirements set by the SCNA and the SHA throughout construction.	
Upon Completion of Construction	
Bathymetric Survey The Contractor will undertake a bathymetric multibeam survey as soon as possible after construction has completed, but prior to the demobilisation of marine plant from site and will provide this to the SCNA and the Port of Immingham SHA (and in the event dropped objects are found, also to the MMO). The purpose of the bathymetric survey is to identify the existence of any dropped components and to confirm the dredged depths reached during the construction works. If the bathymetric surveys identify the presence of dropped objects, the MMO, the SCNA and Port of Immingham SHA will provide further instruction on the measures to be taken. The Contractor will be responsible for following the instructions of the SCNA and Port of Immingham SHA in the event of dropped objects being identified in this bathymetric survey.	Contractor MMO, SCNA and Port of Immingham SHA Contractor
Construction alongside the Operation of IERRT (if required)	
Segregation of Marine and Operational Activities As part of the Tidal Works Approval, the SCNA and Port of Immingham SHA will discuss and agree the appropriate measures to ensure that appropriate procedures and protocols are in place for construction works occurring alongside operations. This may include: - Additional measures (e.g. exclusion zones) to ensure separation of marine works from Ro-Ro vessels proceeding to or departing IERRT; - VTS directing marine craft away from pier being berthed on prior to Ro-Ro arriving in the berth pocket; - Special Instructions issued to Ro-Ro not to berth unless the area is clear of marine works craft; - Limitations for barges not to moor in the vicinity of a berthed Ro-Ro vessel.	Contractor, SCNA and Port of Immingham SHA

All requirements will be incorporated into the appropriate operational and construction documents including: - Risk Assessments - Method Statements The Contractor will be responsible for complying with the requirements set by the SCNA and the SHA throughout construction.	Contractor
Berthing criteria specific to operation-construction: As part of the Tidal Works Approval, the SCNA and Port of Immingham SHA will discuss and agree the appropriate measures to allow for the safe operation of the berth alongside construction activities. The requirements will be determined by the SCNA and Port of Immingham in line with the respective Statutory duties and may include tidal limits, tug requirements, priority berthing arrangements (e.g. for operational vessels), weather limits (e.g. high winds), that are specific to operation and construction occurring simultaneously. The SCNA and the Port of Immingham SHA will be responsible for the promulgation of this information to the Contractor, the berth operator and other marine users and will manage this in accordance with the management systems and procedures in place. All requirements will be incorporated into the appropriate operational and construction documents including: - Risk Assessments - Method Statements The Contractor will be responsible for complying with the SCNA and the Port of Immingham SHA requirements during construction.	
Pilotage / PEC As part of the Tidal Works Approval, the CHA will identify and manage any additional training required to be provided to PECs and Pilots manoeuvring during the operation-construction phase of the works.	

Table 3.5: Air quality

Potential Impact	Mitigation/Enhancement Measure	Responsibility
Construction emissions (marine vessels)	The following measures will be implemented to reduce emissions associated with marine vessels: • They will conform to relevant emissions standards; • Operate on an only when required basis, with no engine idling; • Be well maintained and operate in accordance with manufacturer's instructions; and • Be operated by fully trained and qualified individuals.	Contractor

Table 3.6: Noise and vibration

Potential Impact	Mitigation/Enhancement Measure	Responsibility
Construction noise	Marine works may be undertaken 24 hours a day Monday to Sunday (subject to other environmental restrictions in certain months which prevent this – see the Nature Conservation and Marine Ecology chapter (Chapter 9) of the ES Volume 1 (Application Document Reference number 8.2.9)). Also see nature conservation and marine ecology mitigation described at Table 3.3, above. The Contractor will follow the advice contained within BS 5228:2009+A1:2014 'Code of practice for noise and vibration control on construction and open site' (BSI, 2014). The following measures will also be implemented on site to reduce as far as practicable the potential environmental impacts associated with airborne and underwater noise and vibration from marine construction activities: • Where reasonably practicable, the contractor will use quieter working methods, the most suitable plant and reasonable standard construction hours of working for noisy operations; • No employees, subcontractors and persons employed on the site will cause unnecessary noise from their activities;	Contractor

Potential Impact	Mitigation/Enhancement Measure	Responsibility
	• When operating plant, the use of noise-control equipment such as jackets on pneumatic drills, acoustic covers on compressors, shrouds on piling rigs arid cranes will be implemented; • Where required and achievable, temporary screening between the source and the receiver of noise emissions will be installed; • All plant machinery will conform with relevant standards and directives on permitted noise emissions levels; • Electrically powered plant will be used over diesel power generators where possible and feasible; • All pneumatic percussive tools will be provided with effective silencers/acoustic covers; and • All contractor communication devices will be used at a minimum audible level. For nature conservation and marine ecology mitigation measures, see Table 3.3, above.	
Construction vibration	Although the initial vibration assessment indicates that significant effects on nearby structures such as the IOT due to construction vibration is unlikely, a piling specific community liaison protocol will be developed so that businesses are kept informed of the piling activities, their duration, and their expected impact. Although the vibration may be perceptible, based upon the initial vibration assessment the levels predicted structural and/or cosmetic damage to properties is not expected to occur. For nature conservation and marine ecology mitigation measures, see Table 3.3, above. Measures to ensure vibration impacts relating to construction activities are reduced include: • Use vibratory rig to drive piles to refusal; • Once the piling methods and piling rig is confirmed the construction vibration predictions to be verified to ensure that there are no significant effects expected; and	Contractor/ABP

Potential Impact	Mitigation/Enhancement Measure	Responsibility
	• If necessary, and where conditions allow, the effective energy per blow can be reduced by decreasing the drop height of the hammer.	
Impact of underwater noise and vibration	To reduce the level of impact associated with underwater noise and vibration during construction (in particular piling), the following mitigation measures will be implemented: • **Soft start:** The gradual increase of piling power, incrementally, until full operational power is achieved will be used as part of the piling methodology. • **Vibro piling:** Vibro piling will be utilised where possible (which produces lower peak source noise levels than percussive piling). • **Seasonal piling restrictions**: During percussive piling the following further restrictions will be adopted for nature conservation and marine ecology mitigation measures (Table 3.3). • **Night time piling restrictions**: No percussive piling will take place within the waterbody after sunset and before sunrise on any day between 1 March to 31 March, 1 June to 30 June and 1 August to 31 October inclusive. for nature conservation and marine ecology mitigation measures (Table 3.3). For nature conservation and marine ecology mitigation measures, see Table 3.3, above.	Contractor

Table 3.7: Cultural heritage and marine archaeology

Potential Impact	Mitigation/Enhancement Measure	Responsibility
Damage/disturbance of undiscovered marine archaeological remains	Mitigation measures will be secured through a Written Scheme of Investigation (WSI) (Historic England 2016). However, exact mitigation design will not be finalised until the pre-construction phase is undertaken. The proposed mitigation measures within the draft WSI (Appendix 15.3 Volume 3 of the ES, Application Document Reference number 8.4.15(c)) are currently enforced until that time. The WSI will detail the agreed mitigation that will be in place during the construction of the	ABP/Contractor

Potential Impact	Mitigation/Enhancement Measure	Responsibility
	proposed development. The implementation of the activity specific measures agreed in a WSI is the mitigation, rather than the document itself. The WSI has been and will continue to be developed in line with Historic Environment guidance for Port and Harbour development (Historic England 2016). The WSI is based on the measures recommended in this chapter and will be subject to approval by the Archaeological Curator (Historic England) through the application examination process). No Archaeological Exclusion Zones (AEZs) are proposed due to the lack of A1 anomalies found within the study area surrounding the IERRT project. Should any A1 anomalies be discovered during the works (e.g., through the Protocol for Archaeological Discoveries- see Discovery of unknown archaeological sites or materials, below) then this mitigation may be used. In cases where avoidance is either inappropriate or impossible, the damage to archaeological receptors would be offset, generally by more extensive study, excavation or survey of the receptor. Any mitigation strategy will be identified within the WSI and any recommended methods will be covered by a specific Method Statement, approved by the Archaeological Curator (Historic England), should they be implemented. Where suitable for archaeological assessment, further geophysical surveys undertaken in advance of the development commencing, for example for the purposes of detailed design, that require magnetometer data (e.g., unexploded ordnance (UXO) survey) will also be assessed by a suitably qualified archaeological contractor. This will allow for the identification of any additional ferrous features of archaeological potential within the proposed development, as well as to confirm the presence of ferrous material at the location of features identified during this assessment.	
Damage/disturbance of palaeogeography features	For the purposes of the detailed design of the marine elements of the project, further ground investigation work is programmed to take place. Appropriate archaeological advice has been provided on how that investigation can provide	ABP/Contractor

Potential Impact	Mitigation/Enhancement Measure	Responsibility
	samples of benefit to ongoing archaeological considerations in synergy with the draft WSI (Appendix 15.3 Volume 3 of the ES, Application Document Reference number 8.4.15(c)) which will be confirmed in the updated WSI (following the pre-construction phase design finalisation). A geoarchaeological assessment of any future marine borehole logs obtained as part of this detailed design ground investigation will be undertaken, especially in respect of any logs that contain organic deposits for dating purposes. This will aid in refining the interpretation and therefore help determine the archaeological potential of the area.	
Discovery of unknown archaeological sites or materials	If previously unknown sites or material are encountered during the different phases of the proposed development, measures will be taken to reduce the level of impact. In order to provide for these unexpected discoveries a PAD will be adopted. The PAD is a system for reporting and investigating unexpected archaeological discoveries encountered during construction activities, with a Retained Archaeologist providing guidance and advising on the implementation of the PAD. The PAD also makes provision for the implementation of temporary exclusion zones around areas of possible archaeological interest, for prompt archaeological advice, and, if necessary, for archaeological inspection of important features prior to further activities in the vicinity. The PAD provides a mechanism to comply with the Merchant Shipping Act 1995, including notification of the Receiver of Wreck, and accords with the Code of Practice for Seabed Developers (JNAPC, 2006) and relevant Guidance (Historic England 2016).	ABP/Contractor

Table 3.8: Climate change

Potential Impact	Mitigation/Enhancement Measure	Responsibility
Climate change effects	To reduce the effects of climate change, the below measures will be adopted: • Increased frequency in severe weather events (e.g. storms): - The Drainage Strategy (Annexed to Appendix 11.1 in Volume 3 of ES	Contractor/ABP

Potential Impact	Mitigation/Enhancement Measure	Responsibility
	(Application Document Reference number 8.4.11)) considers the flood risk assessment's findings to ensure that surcharged levels within collector, carrier and receiving systems are appropriately designed and mitigated. The Drainage Strategy considers tide-lock scenarios at flapped outfalls. • Increasing average temperatures and increasing frequency of hot days and heatwaves: - In adherence with British Design Standards the following mitigation measures are considered: o Prevention measures and health and safety plans to be developed to prevent worker exhaustion due to heat. o Use of materials with superior properties which offer increased tolerance to high temperatures to be considered. o Regular maintenance of assets to be undertaken to detect deterioration and fix damage.	

Table 3.9: Protected Species

Potential Impact	Mitigation/Enhancement Measure	Responsibility
Impact to protected and notable species during construction	**Marine Mammals** All marine mammals are protected under Schedule 5 of the Marine and Coastal Access Act (2009) and Annex II of the Conservation of Habitats and Species Regulations (2017) ('The Habitats Directive'). Cetaceans are also protected under Annex IV of The Habitats Directive and pinnipeds are protected under Annex V. Pinnipeds are also afforded protection from the Conservation of Seals Act (1970). For detail regarding mitigations measures for marine mammals, see Table 3.3 nature conservation and marine ecology and Table 3.1 physical processes mitigation, above. These include:	ABP/Contractor

Potential Impact	Mitigation/Enhancement Measure	Responsibility
	• The preferential use of vibropiling over percussive piling; • Employment of soft start protocols (JNCC, 2010); and • The use of a Marine Mammal Observer to ensure no observations of marine mammals within 500 m of works for 30 mins prior to commencement of piling. *Reporting* Reports of each piling event should be completed. MMOs will be equipped with binoculars, a copy of the agreed monitoring protocol and the 'Marine Mammal Recording Form', which is an Excel spreadsheet containing embedded worksheets named 'Cover Page', 'Operations', 'Effort' and 'Sightings'. A Word document named 'Deck forms' is also available, and MMOs may prefer to use this when observing before transferring the details to the Excel spreadsheets. Although these forms were developed for seismic surveys, they can be used for piling operations, although many columns will not be applicable. The information that should be included in each report is: • Date and location of the piling activity; • Details of the piling activity, including: - The duration of the pre-piling search; - The soft-start and ramp-up procedures; and - any occasion where piling was delayed or halted due to the presence of marine mammals. • Details of marine mammal searches, including; - Details of any sightings made by MMO, details of any detections made, and details of the piling activity during the watches; • Details of any marine mammal sightings or detections made;	

Potential Impact	Mitigation/Enhancement Measure	Responsibility
	• Details of any problems encountered, such as any instances of non-compliance with this mitigation protocol, and any variation to this agreed mitigation protocol. **Migratory fish** Migratory fish are protected under Annex II of The Habitats Directive. For detail regarding mitigations measures for migratory fish, see Table 3.3 nature conservation and marine ecology and Table 3.1 physical processes mitigation, above. These include: • The preferential use of vibropiling over percussive piling; • Employment of soft start protocols (JNCC, 2010); and • Seasonal restrictions to ensure percussive piling is to be restricted within the waterbody from 1 June to 30 June and 1 August to 31 October inclusive, after sunset and before sunrise on any day. **Non-breeding birds** Non-breeding birds are protected under The Habitats Directive (2017). For detail regarding mitigations measures for non-breeding birds, see Table 3.3 nature conservation and marine ecology and Table 3.1 physical processes mitigation, above. These include: • The preferential use of vibropiling over percussive piling; • Seasonal restriction to ensure no construction between 1 October to 31 March inclusive; • Employment of noise suppression system for piling on the outer finger pier; and • Cold weather construction restrictions. **Breeding birds** Breeding birds are protected under The Habitats Directive (2017).	

Potential Impact	Mitigation/Enhancement Measure	Responsibility
	For detail regarding mitigations measures for breeding birds, see Table 3.3 nature conservation and marine ecology and Table 3.1 physical processes mitigation, above. These include: • The preferential use of vibropiling over percussive piling; and • Employment of noise suppression system for piling on the outer finger pier.	

3.2 Checking and corrective action

Monitoring

3.2.1 Environmental monitoring of impacts will be undertaken throughout the construction phase. In addition to any monitoring specified in other licences and consents, the requirements of the Offshore CEMP specified in Table 3.1 to Table 3.9 will be closely monitored.

3.2.2 As part of the monitoring process, the appointed contractor will allocate a designated Environmental Site Officer(s), who will be present on-site throughout the construction, including when new activities are commencing and ensure the applicable monitoring as detailed in Section 3 is being implemented. The findings of any monitoring will be shared with those persons/organisations identified within the Offshore CEMP. If considered necessary corrective actions will be agreed and implemented under the supervision of the Environmental Site Officer.

3.2.3 The Environmental Site Officer will observe site activities and report any deviations from the Offshore CEMP in a log book, along with the action taken and general conditions at the time. The Applicant will be informed of any deviations from the Offshore CEMP as soon as possible following identification of such issues.

3.2.4 The Environmental Site Officer will also assist the Applicant with day-to-day contact with MMO and other regulatory agencies such as the EA and the Marine Management Organisation.

3.2.5 During construction, the Environmental Site Officer will conduct regular walkover surveys to ensure all requirements of the Offshore CEMP are being met. Action from these surveys will be documented on an Environmental Action Schedule, discussed with the Site Foreman for programming requirements and issued weekly for actioning.

3.2.6 The Environmental Site Officer will arrange regular formal inspections to ensure the requirements of the Offshore CEMP are being met. After completion of the works, the Environmental Site Officer will conduct a final review.

Records

3.2.7 The Environmental Site Officer will retain records of environmental monitoring and implementation of the Offshore CEMP in a log book. This will allow provision of evidence that the Offshore CEMP is being implemented effectively. These records will include:

- An Environmental Action Schedule;
- Records of licences, permits and approvals;
- Results of inspections;
- Other environmental surveys and investigations; and
- Environmental equipment test records.

3.2.8 As detailed in paragraph 1.1.1, the Principal Contractors Offshore CEMP will be a live document and as such updated regularly, with a full review on at least a quarterly basis throughout construction.

3.3 Management review

3.3.1 The Principal Contractor's Offshore CEMP will be signed off on completion of the offshore construction works. The environmental management of the operational development will fall under the existing management plans for the Port of Immingham.

4. References

British Standards Institute (2014) BS 5228-1:2009+A1:2014 – Code of practice for noise and vibration control on construction and open sites. Part 1: Noise. Available online at: https://www.leicestershire.gov.uk/sites/default/files/field/pdf/2021/9/14/TG17-BSI-Code-of-practice-for-noise-and-vibration-control-on-construction-and-open-sites-Part1.pdf

Cook, E.J., Macleod, A. Payne, R.D., and Brown, S. 2014 (edited by Natural England and Natural Resources Wales in 2015). Marine Biosecurity Planning - Guidance for producing site and operation-based plans for preventing the introduction and spread of non-native species in England and Wales. Available online at: [redacted]

CIRIA. (2015). Environmental good practice on site (fourth edition).

Conservation of Seals Act (1970). https://www.legislation.gov.uk/ukpga/1970/30

Department for Environment, Food and Rural Affairs and Environment Agency (2019). Pollution prevention for businesses. Available at: https://www.gov.uk/guidance/pollution-prevention-for-businesses.

Environment Agency. (2013). Review of fish population data in the Humber Estuary. A report by the University of Hull for the Environment Agency.

GB Non-Native Species Secretariat. Check, Clean, Dry. Available online at: [redacted]

Harrison, A.J., Walker, A.M., Pinder, A.C., Briand, C. and Aprahamian, M.W., (2014). A review of glass eel migratory behaviour, sampling techniques and abundance estimates in estuaries: implications for assessing recruitment, local production and exploitation. Reviews in Fish Biology and Fisheries, 24(4), pp.967-983.

Historic England (2016). The Assessment and Management of Marine Archaeology in Port and Harbour Development. Available online at: https://historicengland.org.uk/images-books/publications/assessment-management-marine-archaeology-port-and-harbour-development/6801-ports-and-harbours/

IMO (2021). International Convention for the Control and Management of Pollution from Ships (MARPOL). Available online at: https://www.imo.org/en/About/Conventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx.

IMO (2017). International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM). Available online at: https://www.imo.org/en/About/Conventions/Pages/International-Convention-for-the-Control-and-Management-of-Ships%27-Ballast-Water-and-Sediments-(BWM).aspx

JNAPC (2006). JNAPC Code of Practice for Seabed Development. York, Joint Nautical Archaeology Policy Committee. Available online at: http://www.jnapc.org.uk/jnapc_brochure_may_2006.pdf

JNCC (2010). Statutory nature conservation agency protocol for minimising the risk of injury to marine mammals from piling noise. Available online at:

https://data.jncc.gov.uk/data/31662b6a-19ed-4918-9fab-8fbcff752046/JNCC-CNCB-Piling-protocol-August2010-Web.pdf

Marine and Coastal Access Act (2009). Available online at: https://www.legislation.gov.uk/ukpga/2009/23/contents.

NetRegs website (2020): Environmental Guidance for your Business in Northern Ireland and Scotland. Available online at: https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/

The Conservation of Habitats and Species Regulations (2017). Available online at: https://www.legislation.gov.uk/uksi/2017/1012/contents/made

The Crown Estate (2021). Archaeological Written Schemes of Investigation for Offshore Wind Farm Projects. The Crown Estate. Available online at: https://www.thecrownestate.co.uk/media/3917/guide-to-archaeological-requirements-for-offshore-wind.pdf

Appendix A Outline Stakeholder Management Plan

A.1.1 This plan will be put in place prior to the works commencing. This will include relevant project information and contact details for stakeholders to communicate queries to the project team and make complaints. The Stakeholder Management Plan will be developed by the appointed Principal Contractor in conjunction with ABP and approved by the MMO to ensure transparency of reporting and appropriate lines of communication into and out of the Project are established.

A.1.2 For further details regarding the Stakeholder Management Plan, refer to the Outline Onshore CEMP.

Appendix B Outline Shipboard Oil Pollution Emergency Plan

B.1.1 An Outline Shipboard Oil Pollution Emergency Plan (SOPEP) is required under Annex I of the International Convention for the Prevention of Pollution from Ships (MARPOL) for all ships with 400 gross tonnage and above.

B.1.2 The SOPEP is available to assist a ship's crew in dealing with an unexpected discharge of oil. Its primary purpose is to set in motion the necessary actions to stop or minimise the discharge of oil and to mitigate its effects.

B.1.3 The primary objectives of this Plan are to:

- Prevent oil pollution; and
- Stop or minimise oil outflow when a damage to the ship or its requirements occurs.

B.1.4 The SOPEP contains general information regarding a vessel as well as steps and procedure to contain the discharge of oil into the sea using SOPEP equipment. Requirements of a SOPEP include:

- The SOPEP must be written following the provisions of regulation 37 of Annex I of MARPOL.
- The approved SOPEP is adhered to aboard the vessel during an oil pollution incident;
- SOPEP contains all the information and operational instructions related to the emergency procedure and SOPEP equipment;
- The SOPEP must contain important contact information of all the important contacts to be contacted in the event of an oil pollution; and
- A recognised authority has approved the SOPEP.

B.1.5 The SOPEP should be completed ahead of any works occurring onboard a vessel. The following sections should be comprehensively detailed.

B.2 Vessel Detail

B.2.1 Details of the vessels should be outlined within this section.

B.2.2 The general arrangement of the ship should be detailed, including the location of oil tanks and fuel lines.

B.3 Reporting Requirements

B.3.1 Reporting requirements should be outlined in this section alongside guidance to keep records of any pollution incidents.

B.4 Steps to Control Discharge

B.4.1 This section should include the steps required to control discharge, providing clear guidance on how to accomplish this for a variety of situations.

B.4.2 In no case should actions be taken that jeopardise the safety of the crew.

B.5 Priority Actions

B.5.1 Priority actions must be defined. For example, the SPOEP should contain the duty of each crew member at the time of the spill, including emergency muster and actions.

B.5.2 Here, the relevant authorities that must be notified following a pollution event should be listed to ensure a coordinated approach to any pollution event.

B.6 Mitigating Activities

B.6.1 Any mitigating activities should be defined within this section.

B.7 SOPEP Equipment Inventory

B.7.1 This section must include the location of the SOPEP locker as well as an inventory of the locker's contents.

Appendix C Outline Oil Spill Contingency Plan

C.1.1 The existing Oil Spill Contingency Plan and Humber clean for Immingham Port and the HM Humber, will be followed in the event of a spillage, to minimise impacts of a spill entering the port waters.

Acronyms

Acronyms	Definition
ABP	Associated British Ports
AEZ	Archaeological Exclusion Zones
APFP	Applications: Prescribed Forms and Procedure
CD	Chart Datum
Cefas	Centre for Environment, Fisheries and Aquaculture Science
CEMP	Construction Environmental Management Plan
CIRIA	Construction Industry Research and Information Association
CoCP	Code of Construction Practice
dDCO	Draft Development Consent Order
DCO	Development Consent Order
EA	The Environment Agency
EIA	Environmental Impact Assessment
ES	Environmental Statement
GB	Great Britain
GI	Ground Investigation
GPP	Guidance for Pollution Prevention
HES	Humber Estuary Services
IERRT	Immingham Eastern Ro-Ro Terminal
IMO	International Maritime Organisation
INNS	Invasive Non-Native Species
ISPS	International Ship and Port Facility Security
m^3	Meters cubed
MARPOL	International Convention for the Prevention of Pollution from Ships
MMMP	Marine Mammal Management Plan
MMO	Marine Management Organisation
NSIP	Nationally Significant Infrastructure Project
PAD	Protocol for Archaeological Discoveries
PAM	Passive Acoustic Monitoring
PC	Principal Contractor
PINS	Planning Inspectorate
PoI	Port of Immingham

Acronyms	Definition
PPG	Pollution Prevention Guidance
RAMS	Risk assessment method statement
SoS	Secretary of State
SOPEP	Shipboard Oil Pollution Emergency Plan
SWMP	Site Waste Management Plan
TSHD	Trailer Suction Hopper Dredge
UXO	Unexploded Ordnance
VTS	Vessel Traffic Services
WSI	Written Scheme of Investigation

aecom.com